

**CLAIMS**

1. An electrolytic mixture for molten carbonate fuel cells (MCFC) comprising a carrier solution and a 5 carbonates mixture, characterised in that said carrier solution is a mixture of one or more organic solvents and water.

2. The electrolytic mixture according to claim 1 wherein said carbonates are mixed in such stoichiometric 10 ratios as to obtain the  $\text{Li}_2\text{CO}_3/\text{K}_2\text{CO}_3$  eutectic mixture in a ratio of 62/38.

3. The electrolytic mixture according to claims 1 or 2 wherein  $\text{Li}_2\text{CO}_3$  and  $\text{K}_2\text{CO}_3$  are mixed in a stoichiometric ratio comprised of between 3:1 and 1:1, preferably in a 15 ratio of 1.7:1.

4. The electrolytic mixture according to any of the claims 1 to 3 wherein said carbonates mixture is constituted by  $\text{Li}_2\text{CO}_3$  and  $\text{LiKCO}_3$ .

5. The electrolytic mixture according to claim 4 20 wherein  $\text{LiKCO}_3$  and  $\text{Li}_2\text{CO}_3$  are present in a stoichiometric ratio of 3:1.

6. The electrolytic mixture according to any of the claims 1 to 5 wherein said one or more organic solvents are selected from: vaseline, wax or glycerine.

25 7. The electrolytic mixture according to any of

the claims 1 to 6 wherein said carrier solution is a mixture of glycerine and water, with a glycerine percentage comprised of between 5% and 80% by weight.

8. The electrolytic mixture according to claim 7 wherein said carrier solution is a glycerine and water mixture with a glycerine percentage comprised of between 15% and 50% by weight.

9. The electrolytic mixture according to any of the claims 1 to 8 wherein said carbonates are present in quantities comprised of between 50% and 90% by weight.

10. The electrolytic mixture according to claim 9 wherein said carbonates are present in quantities comprised of between 70% and 80% by weight.

11. The electrolytic mixture according to any of the claims 1 to 10 in the form of a spreadable paste.

12. A process for the attainment of the electrolytic mixture according to any of the claims 1 to 11 comprising the steps of:

a) mixing one or more organic solvents and water;

20 b) separately mixing the carbonates;

c) mixing the carrier solution obtained in step a) with the carbonates mixture obtained in step b).

13. The process according to claim 12 wherein, in step a), said one or more solvents are selected from 25 vaseline, wax and/or glycerine, preferably glycerine, and

are used in quantities comprised of between 5% and 80% by weight, preferably comprised of between 15% and 50% by weight.

14. The process according to claims 12 or 13  
5 wherein, in step b), the carbonates used are preferably  $\text{Li}_2\text{CO}_3$  and  $\text{K}_2\text{CO}_3$  mixed in stoichiometric ratios comprised of between 3:1 and 1:1, preferably 1.7:1.

15. The process according to any of the claims 12  
to 14 wherein, in step b), the carbonates are mixed in a  
10 ball mill for a period of time comprised of between 10  
and 48 hours, preferably between 20 and 28 hours.

16. The process according to any of the claims 12  
to 15 wherein, in step c), the carbonates are mixed with  
the carrier solution in quantities comprised of between  
15 50% and 90%, preferably 70% and 80%.

17. The process according to any of the claims 12  
to 16 wherein step c) occurs by the gradual addition of  
the carbonates mixture into the carrier solution with  
constant mixing.

20 18. A current collector comprising a layer of  
electrolytic mixture, according to any of the claims 1 to  
17, spread over at least one of its surfaces.

19. A collector preparation method comprising the  
stages of:

25 a) spreading the electrolytic mixture over at

least one of its surfaces;

b) placing said collector on the electrode using a surface not covered by said electrolytic mixture.

20. The method according to claim 19 wherein step  
5 a) takes place at room temperature.

21. A molten carbonate fuel cell (MCFC) comprising the current collector according to claim 18.